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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,207	03/16/2004	Bey-Dih Chang	SEN-001US3	3124

7590 07/26/2007

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EXAMINER	
MARVICH, MARIA	
ART UNIT	PAPER NUMBER
1633	
MAIL DATE	DELIVERY MODE
07/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/801,207	CHANG ET AL.	
	Examiner	Art Unit	
	Maria B. Marvich, PhD	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-8 and 26-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-8 and 26-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Any rejection of record in the previous action not addressed in this office action is withdrawn. The new grounds of rejection herein were necessitated by amendment and, therefore, this action is final.

Claim Objections

Claims 1, 8, 26, 31, 37 and 38 are objected to because of the following informalities: --Prosaposin-- is misspelled as "Prosanosin".

Claims 8, 31 and 37 recite that the "expression of the cellular gene is detected by hybdridization to a complementary nucleic acid". However, what is detected by hybridization nor what the nucleic acid is complementary. It would be remedial to recite e.g. --expression of the cellular gene is detected by hybridization of cellular RNA to a nucleic acid complementary to the cellular gene--.

Claim 26 has an inadvertently inserted space between the words "or" and culturing" in line 5.

Claim 38 recites "wherein the assay is subpart (a)" in line 2 wherein for grammatical clarity should be recited --wherein the assay in subpart (a)--. As well, the claim recites, "that induced p21 expression" which for consistency should be in the present --that induces p21 expression --.

Double Patenting

Claim 2 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). By deleting "repressed", both claims are drawn to assaying cellular genes induced by p21.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 38 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. **This is a new rejection necessitated by applicants'amendment.**

The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More particularly, the claims are directed to a genus of "agents that induced p21 expression whereby the extent of p21 induction is insufficient for complete inhibition of genes inhibited by 21". Hence, the claims are specifically drawn to an agent that can induce p21 to specific levels. However, the art and the specification teach only agents that induce p21 in a qualitative manner and whose regulation is not quantitative.

The written description requirement for a claimed genus may be satisfied by sufficient description of a representative number of species by actual reduction to practice, reduction to drawings or by disclosure relevant identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure or by a combination of such identifying characteristics sufficient to show applicant was in possession of the claimed genus. The Guidelines for Written Description state "The claimed invention as a whole may not be adequately described if the claims require an essential or critical feature which is not adequately described in the specification and which is not conventional in the art". (Federal Register/ Vol. 66, No. 4/Friday, January 5, 2001/Notices, column 1, page 1105). The Guidelines further state, "The claim as a whole, including all limitations found in the preamble, the transitional phrase, and whole, including all limitations found in the preamble, the transitional phrase, and the body of the claim, must be sufficiently supported to satisfy the written description requirement" (at page 1105, center column, third full paragraph). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations. *Lockwood v. American Airlines Inc.* (CA FC) 41 USPQ2d 1961 (at 1966).

The specification does not provide sufficient written description with respect to the broad genus of recited agents. The specification teaches that there are inducing agents for induction of inducible agents. These agents are such as IPTG. The expression from an inducible promoter can be manipulated such that the promoter is off or on and in the off or on state, p21 is either expressed or inhibited from expression. However, there is no disclosure of an agent that can be added such that the level of p21 is controlled as required by claim 38. Therefore, there is no

structure-function relationship disclosure in the instant specification that would allow a person of skill in the art to identify the required agents. Given the large size of agents that regulate inducible promoters and the inability to determine which will also have the essential element, it is concluded that the invention must be empirically determined. In an unpredictable art, the disclosure of no species would not represent to the skilled artisan a representative number of species sufficient to show applicants were in possession of claimed genus.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, 26, 27, 30, 32, 33 and 36 stand rejected under 35 U.S.C. 102(e) as being anticipated by Beug et al (US 6,383,733; see entire document) as evidenced by Yu et al (J Neuroimmunology, 2000, pages 2-10) and Tremain et al (Oncogene, 2000, page 1698-1709). **This rejection is maintained for reasons of record in the office action mailed 1/11/07 and restated below. The rejection has been extended to newly added claims 26, 27, 30, 32, 33 and 36.**

Beug et al teach culturing of a mammalian cell comprising a reporter gene fused to the plasminogen activator inhibitor promoter in the presence and absence of pharmaceutical

compositions and with TGFβ (see e.g. figure 18). Following this gene expression of the reporter gene is assayed. As evidenced by Yu et al (see e.g. page 8, col 2), TGFβ is an inducer of senescence and p21. Furthermore, p21 induces PAI as evidenced by Tremain et al (see e.g. page 1706, col 1). Therefore, a mammalian cell comprising a gene induced by p21, PAI-reporter, is treated with TGFβ, an inducer of senescence in the presence and absence of compounds. Identification of an inhibitor of reporter gene expression (see e.g. figure 18) identifies inhibitors of the induction of this gene and inhibitors of p21 and senescence inherently. This method is intended as a screen to identify agents that inhibit TGFβ mediated expression from the reporter gene construct (see e.g. col 11, line 50-61). Reporter gene expression was detected by assaying activity of the cellular gene product.

Claims 1, 2, 6, 8, 26, 27, 29, 31-33, 35 and 37 stand rejected under 35 U.S.C. 102(e) as being anticipated by Fisher and Jiang (US 6,051,376; see entire document). **This rejection is maintained for reasons of record in the office action mailed 1/11/07 and restated below. The rejection has been extended to newly added claims 26, 27, 29, 31-33, 35 and 37.**

Fisher and Jiang propose methods of identifying inhibitors of senescence (see e.g. col 17, line 45-50). The methods involve culturing a plurality of cells with a compound and assaying for expression of MDA7 as a marker. Method of assaying includes using immunological agents and hybridization (see e.g. figure 4 and col 58, line 28-64). MDA7 it is taught is induced by induction of senescence (see e.g. col 98, line 8-30), which is also associated with induction of p21 or mda6 (col 109, line 25-38). Identification of an inhibitor of MDA7, through identification of muted MDA7 expression, results in identification of inhibitors of p21 and senescence

inherently. As well, applicants teach that Fibronectin is assayed following induction of senescence (conditions of IFNβ and MEZ).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 28 and 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher and Jiang (US 6,051,376; see entire document) as applied to claims 1, 2, 6 and 8 above, and further in view of Porter et al (J Cell Physiology, 1992, pages 545-551; see entire document). **This rejection is maintained for reasons of record in the office action mailed 1/11/07 and restated below. The rejection has been extended to newly added claims 28 and 34.**

Applicants claim a method of identifying inhibitors of senescence by assaying for expression of fibronectin XO2761.

The teachings of Fisher and Jiang are described above and are applied as before except;

Fisher and Jiang do not teach that Fibronectin I is assayed as a marker for inhibition of senescence.

Porter et al teach that human fibronectin (absent evidence to the contrary, this is Fibronectin I and as evidenced by XO2761) is assayed using SEN-1, SEN-2 and SEN-3 as markers of senescence (see e.g. abstract). Porter et al teach that SEN antibodies react with fibronectin from a variety of cells and are useful markers for senescence. Multiple species were

assayed and the antibodies were found to be universal for a variety of fibronectins from human. XO2761 is distinguishable by being from human.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to assay for inhibitors of senescence using the methods taught by Fisher and Jiang using Fibronectin I as a marker as taught by Porter et al because Fisher and Jiang teach that it is within the ordinary skill of the art to induce senescence and assay for induction of gene expression of senescence related genes and then to identify inhibitors of senescence and because Porter et al teach that it is within the ordinary skill of the art to use human fibronectin as a marker for senescence detectable by SEN antibodies. One would have been motivated to do so in order to receive the expected benefit of ease of detection from a variety of cells coupled with the ease of detection demonstrated by Porter et al. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Response to Argument

Applicants traverse the claim rejections under 35 U.S.C. on pages of the amendment filed . Applicants argue that Beug requires expression of a TGFβ transgene in the cell in order for the method to work whereas the instant method has no such requirement and furthermore TGFβ does not unambiguously induce p21.

Applicants' arguments filed 5/7/07 have been fully considered but they are not persuasive. Applicants' arguments are based upon limitations that are not present in the claim to distinguish between the art and the instant claims. As such a broad interpretation of the claims

encompasses Beug et al. Specifically, the instant method requires that senescence be induced and the combination of Beug et al and Yu et al teaches that the cell is under conditions in which senescence is induced. Secondly, the instant method is drawn to assaying expression of a gene that is induced in response p21 and not that the cell be treated such that p21 is required to induce the gene. As such PAI, which is induced by p21 is assayed for expression levels. Applicants argue that Fisher et al do not include conditions in which senescence is induced. However, Fisher et al teach induction of senescence under conditions of IFNβ and MEZ (see e.g. col 42, line 7-34). Furthermore, Fisher et al teach that expression of mda-6 and mda-7 is a function of aging and senescence in humans see e.g. col 8, line 16-34. Hence, expression of mda-7, which is assayed, is a consequence of conditions such as those described in col 42 that lead to senescence. This step is inherently and explicitly part of the method of Fisher et al.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101, which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 and 6-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-8 and 11-14 of U.S. Patent No. 6, 706,491.

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims. That is, claims 1, 2, 4-8 and 11-14 of U.S. Patent No. 6, 706,491 anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, U.S. Patent No. 6, 706,491 and the instant claims recite a method comprising treatment of a mammalian cell such that p21 is induced (the instant claims recite that senescence is induced which is a p21 related event) and then assay for genes induced by p21 in the presence and absence of test compounds. The method of the instant claims identifies inhibitors of senescence, which is inherent in the method of U.S. Patent No. 6, 706,491 that identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding a patent from U.S. Patent No. 6, 706,491, then two different assignees would hold a patent to the claimed invention of U.S. Patent No. 6, 706,491, and thus improperly there would be possible harassment by multiple assignees.

Claims 1-3 and 6-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 28-37 and 58-63 of copending Application No. 10/233,032.

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims 28-37 and 58-63 of copending Application No. 10/233,032. That is, claims 28-37 and 58-63 of copending Application No. 10/233,032.anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, copending Application No. 10/233,032 and the instant claims recite a method comprising treatment of a mammalian cell such that p21 is induced (the instant claims recite that senescence is induced which is a p21 related event) and then assay for genes induced by p21 in the presence and absence of test compounds. The method of the instant claims identifies inhibitors of senescence, which is inherent in the method of U.S. application 10/233,032, which identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding the 10/233,032, then two different assignees would hold a patent to the claimed invention of 10/233,032, and thus improperly there would be possible harassment by multiple assignees.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3 and 6-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25-30, 32, 33, 52-58, 95-101, 103-105 and 107-115 of copending Application No.09/861925.

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims. That is, claims 25-30, 32, 33, 52-58, 95-101, 103-105 and 107-115 of copending Application No.09/861925 anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, application 09/861,925 and the instant claims recite a method of identifying a compound that inhibits induction of genes using a cell comprising a gene induced by p21 under conditions that induce senescence. The method of the instant claims identifies inhibitors of senescence, which is inherent in the method of U.S. application 09/861925, which identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding a patent from 09/861925, then two different assignees would hold a patent to the claimed invention of 09/861925, and thus improperly there would be possible harassment by multiple assignees.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Argument

It is acknowledged that applicants' will address the provisional obviousness double patenting rejections upon indication of allowable subject matter. However, until the recited claims are patented or a terminal disclaimer is filed, the claims remain rejected.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria B. Marvich, PhD whose telephone number is (571)-272-0774. The examiner can normally be reached on M-F (7:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach, PhD can be reached on (571)-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maria B Marvich, PhD
Examiner
Art Unit 1633